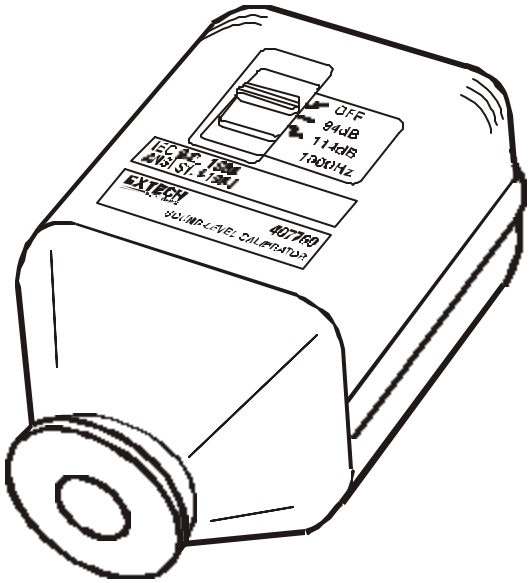
User's Manual

EXTECH INSTRUMENTS

Sound Level Calibrator (94 / 114dB)

Model 407769



Warranty

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 for authorization. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Introduction

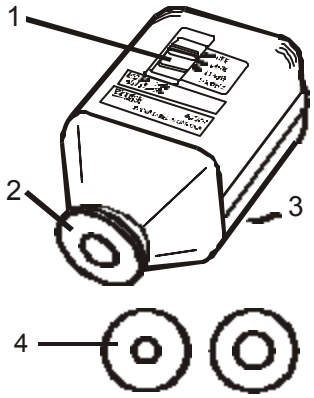
Congratulations on your purchase of the Extech 407769 Sound Level Calibrator. This device performs a 1kHz calibration on 1" and 1/2" microphones. Two calibration levels are provided for flexibility: 94 and 114 dB. The portability of the 407769 lends itself well to the calibration verification of sound level meters and dosimeters in-house and in the field. Careful use of this meter will provide years of reliable service.

Specifications

Output Sound Pressure Levels	94 or 114 dB (re 20uPa) under reference conditions
Output frequency	1000Hz ± 4%
Reference Conditions	
Temperature	68°F (20°C)
Atmospheric Pressure	1013mbar (760mm of Hg)
Relative Humidity	65%
Accuracy	± 0.5 dB under stated reference conditions
Total Harmonic Distortion (THD)	< 3%
Power	9V Battery; Battery life: 100 hours approx.
Temperature Coefficient	± 0.015dB / °C
Microphone accommodation	1" and 1/2"
Operating Temperature	32°F to 104°F (0°C to 40°C)
Operating Humidity/Altitude	Max. 90% RH / 2000 meters
Storage Temperature	14°F to 140°F (-10°C to 60°C)
Operating Humidity	10 to 70% RH
Standards	Conforms to ANSI S1.40-1984 and IEC942 1988 Class 2
Safety	CE Marked; Complies with EMC
Weight	10 oz. (283g) including battery
Dimensions	4 x 2.5 x 2.1" (103 x 63 x 54 mm)
Accessories	9V Battery, microphone adapters, and carrying case

Meter Description

1. Power / Output Level Switch
2. Microphone Cavity
3. Battery compartment (rear)
4. ¼ & ½ adaptors



Calibrator Operation

Preparation for use

Ensure that a fresh 9V battery is installed in the Calibrator. To quickly verify the operation of the Sound Level Calibrator, proceed as follows:

1. Check the 94dB range by turning the Power switch from the OFF position to the 94dB position and listen for the tone (1kHz). If no tone is heard the battery should be replaced. Return for service if battery replacement does not correct the problem.
2. Check the 114dB range by turning the power switch to the 114dB position. The 20dB increase in level from 94 to 114dB should be easy to detect audibly.

Calibration Procedure

1. The Calibrator's microphone cavity accommodates a 1" microphone. When calibrating an instrument with a 1/2 or 1/4" microphone one of the supplied microphone adapters must be used. Plug the microphone adapter directly into the Calibrator's mic cavity.
2. Set the Calibrator's Power switch to the 94 or the 114 dB. Select the dB level that is closest to the upper range limit of the device under calibration.
3. Place the Sound Level Calibrator over the microphone of the device under calibration.
4. On the instrument being calibrated, set the range to 100dB or 120dB for a Calibrator setting of 94dB or 114dB respectively.
5. The instrument under calibration may be set to any response setting (FAST, SLOW, etc.) or weighting (A, B, or C).
6. On the device under calibration, turn its sensitivity or calibration adjustment so that the displayed dB on the device under test matches the calibrator's 94 or 114dB signal.

Measurement Considerations

1. When the Calibrator is not in use, turn off Power to conserve battery life.
2. Ambient noise or vibration can reduce calibration accuracy especially at low ranges.
3. Check that the calibration area is free of Radio Frequency, EMF, and other electrical noise that can compromise the Calibrator's accuracy.

Battery Replacement

When the Calibrator no longer emits an audio signal when set to the 94 or the 114dB Power switch setting, replace the 9V battery. To replace battery:

1. Slide open the battery compartment on the rear of the meter
2. Replace the 9V battery and close the battery compartment

Calibration and Repair Services

Extech offers complete repair and calibration services for all of the products we sell. For periodic calibration, NIST certification or repair of any Extech product, call customer service for details on services available. Extech recommends that calibration be performed on an annual basis to insure calibration integrity.

Copyright © 2001 Extech Instruments Corporation.
All rights reserved including the right of reproduction in whole or in part in any form.

☎
Tech Support Hotlines
781-890-7440 ext. 200
extech@extech.com
www.extech.com